Groundwater Sustainability in the Piscataqua and Coastal River Basins
Groundwater Project Advisory Team Meeting
June 5, 2003

MEETING SUMMARY
Attendees: Ray Talkinton (Geosphere), Brian Goetz (Aquarion Water Company), Cynthia Copeland (SRPC), Marilee Horn (USGS), Keith Robinson (USGS), Tom Mack (USGS), Tom Fargo (Dover), Sue Foote (Seabrook), Laura Simmons (N. Hampton), Brain Mrazik (USGS), Jack Donohue (ENSR), Rick Chormann (DES-NHGS), Greg Barker (DES-NHGS), Diana Morgan (DES), Brandon Kernon (DES), Matt Davis (UNH), James Hewitt (LRAC), and Ted Diers (NHCP).

1. Update on project funding – The project is well on its way towards full funding. Approximately $60,000 has come in from community contributions. Additional invoices will go out to other communities in the next month. The direct appropriation in the amount of $493,000, orchestrated by Senators Sununu and Gregg, is in the final stages of approval by NOAA.

2. Special Guest Presentation – Brian Boetz, Aquarion Water Company – Mr. Goetz presented on the extent of Hampton Water Works/Aquarion operations on the coast. They supply 1.7 – 2.1 mgpd in the winter and 2.5 – 4.5 mgpd in the summer. They have about 8,500 customers with 1,200 summer customers. They have seen steady water use amounts over time and experience about 1.5% annual growth in demand. Mr. Goetz noted the disparity between summer and winter water for a variety of different user types. For example, a large single family house uses about 350 gpd in the winter and 514 gpd in the summer. A rental cottage averages 526 gpd/unit in the summer. Aquarion has had a moratorium on new connections since 1995 and have added 4 new sources in that time. Despite the new sources, they still have "peak yield" limits. The outdoor watering restriction last summer yielded a 20% reduction in demand. They have noted that sewer and stormdrain installation has reduced capacity from some wells. The future for water supply may include recharge from stormwater drains, especially in Hampton.

Project Updates

3. NH Geological Survey – Rick Chormann – NHGS has hired one employee, Greg Barker, and two interns to work on the project.
   - Groundwater network expansion – DES asked the state for $196k in the capital budget for a statewide bedrock well network. The request was included in the House budget but not in the Senate's.
   - Data Mining – Interns will be looking at DOT boring logs, DES waste files and DES large withdrawal monitoring data. Additional data may come from water suppliers who have installed exploratory wells.
   - Well inventory – DOT surveying teams will assist DES in setting elevation data for the known wells from older networks and wells located in the data mining.
   - Surficial Geology – Seven quads will be completed by December. These quads will be edge matched and cover all of the immediate seacoast area.
   - Groundwater Availability – NHGS is working on a literature review to find appropriate modeling and estimating tools for regional groundwater availability. The most promising methods will be brought to an advisory committee meeting or be the subject of an upcoming workshop to identify which method(s) will be used.

- Water Use – NHGS identified 58 potential facilities that may be major water uses that are not presently included in the water use registry. This yielded two new registrations. Other facilities will be examined in more depth.

4. Regional Water Use Investigation – Marilee Horn – USGS has been compiling data on individual water users from all registered users, community systems and companies (by SIC code). She has also used census data and existing GIS layers for town level information. Other data needed is from any existing metered systems, lot sizes, and swimming pool numbers. USGS has also begun to integrate some of the data, creating coefficient-based estimates of domestic and commercial use and adding existing data into NEWUDS (the water use data system). The next step will be to begin data verification with field work and data sets from water systems then move onto analysis. Ms. Horn presented a sample analysis of a single town's water use. She showed how different data sets did not give agreement between water use and supply.

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5. Streamgage Monitoring Network Enhancements – Tom Mack – Long-term gages have been installed on the Winnicut and Isinglass Rivers. The Winnicut gage is now on-line in real-time on the USGS web page: (http://waterdata.usgs.gov/nh/nwis/rt). Temporary gages, for calibrating the Seacoast ground-water-flow model, have been installed at: Mill Brook (Stratham), Berry's Brook (Portsmouth), Little River (N. Hampton), Taylor River (Hampton), and Hampton Falls River(Hampton Falls). Plans are underway to install one more temporary gage on Great Brook in Kensington.

6. Seacoast Groundwater Flow Simulation - Tom Mack – The focus of the ground-water-flow model work to date has been on preliminary testing for conceptual understanding and assessing data needs. A paper discussing the preliminary model testing and data needs is being prepared for publication at the International Ground Water Modeling Center - MODFLOW conference this fall. There are still questions amongst members of the Advisory Team about the model, Tom reiterated the objectives and scope of the modeling component. The Fall meeting will take up this part of the project as our primary focus. The model is described by some as a geographically based water budget accounting tool. There is a great need to quantify error/confidence in each data set – the model will help to do this. The Fall meeting will take up two questions: 1) the definition of water "availability" and "sustainability" and 2) the specific goals of the model. It was suggested that the UNH Brown Center on near Adams Point in Durham would be good spot for this meeting.